

# COLPOSCOPY 2020 — COLPOSCOPY PROTOCOLS

## A Summary of the Clinical Experts Consensus Guidelines of the Polish Society of Colposcopy and Cervical Pathophysiology and the Polish Society of Gynecologists and Obstetricians

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**The Consensus was developed by clinical experts  
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## ABSTRACT

The Polish Society of Colposcopy and Cervical Pathophysiology and the Polish Society of Gynecologists and Obstetricians provide comprehensive guidelines for colposcopy practice in secondary cervical cancer prevention in Poland. This part of the guidelines, developed by the clinical experts of the Working Group No. 1 (WG1), concerns the colposcopy protocols with the main aim of algorithmizing the procedure, together with all procedure-related processes. The detailed analysis of strong scientific evidence and an extensive literature review of current international colposcopic recommendations were carried out, with also a broad investigation of recently ongoing dynamic changes in national health systems. The attention to colposcopic limitations also occurring in Polish conditions was kept. The overriding goal was the recommended obligatory minimal colposcopy approach introduction. To enhance the standard of colposcopy, adjustment of a precolposcopic assessment, a performance technique, types of used biopsies, as well as the procedure documentation was made. Elements of the risk-based stratification for the increased risk of developing cervical cancer was also included if it was applicable for that part of the guidelines. Comprehensive colposcopy guidelines are a step towards the ongoing era of a precision medicine in cervical cancer prevention in Poland.

**Key words:** colposcopy; cervical biopsy; cervical cancer prevention; colposcopic practice; guidelines

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*The recommendations present current management that can be modified and changed in justified cases, after careful analysis of a given clinical situation, which in the future may constitute grounds for their modification and updating.*

## INTRODUCTION TO COMPREHENSIVE GUIDELINES FOR STANDARDS IN COLPOSCOPY “COLPOSCOPY 2020”

Colposcopic examination is one of diagnostic-therapeutic key points in the cervical cancer screening (CCS) [1, 2], regardless of the primary screening test used. Histopathological “gold standard” detection of high-grade squamous intraepithelial lesions and cervical cancer is based on colposcopy [2].

The main purpose of these comprehensive colposcopy guidelines is the algorithmization of all processes accompanying this procedure, in achieving the highest possible sensitivity and specificity in Polish conditions [2–4]. In the recommended adjustment of the indications, implementation and colposcopy technique, a variety of currently used approaches in Poland, as well as varying levels of training and experience of colposcopists was considered.

The limitations of a diagnostic value of colposcopies are widely known [2, 3], unfortunately they are far from expected. The sensitivity of colposcopies for detecting high-grade cervical squamous intraepithelial lesions, with subcategorization to cervical intraepithelial neoplasia grade 3 and greater [HSIL (CIN3+)], ranges from 50 to 65%, depending on the study [5–9].

The Consensus was based on a strong evidence with extensive review of current international colposcopic standards [1–5, 10–38] and on the Committee’s own experience. Significant limitations resulting from the insufficient availability of properly standardized research, especially in a Polish population, was also maintained.

Participation in the Consensus of pathologists and gynecological cytopathologists aimed at interdisciplinary analysis of all colposcopy-related processes and a diagnostic background, which is an important factor in the continuous pursuit of precision medicine.

The complexity of the colposcopy standardization in Poland is the coexistence of three CCS models: two financed from public funds, i.e. population-based (currently not continued) and opportunistic, and one outside the public system based also on the opportunistic model [39].

The specificities of Polish gynecological prophylaxis, including CCS, is an extraordinarily strong sector of a private medical service, rather unprecedented in other countries, paid by patients' own resources without involvement of insurance companies. Many patients directly paying for health services expect to maximize their health interests, not population-based optimization or cost-effectiveness.

Secondary CCS in Poland in the opportunistic model financed from private funds is not sufficiently standardized and practically takes place beyond effective quality assessment and quality control. The problem is compounded by the lack of comprehensive recommendations for CCS in our country for nearly 10 years [40], and its objective assessment due to the lack of comprehensive statistical data and screening results remaining outside of synthetic records [41–43].

The overriding goal of the Guidelines is to change the current state and introduce an original screening model that will allow to combine a standardized controlled opportunistic private CCS model with a population-based organized CCS model financed from public funds. It seems, in Polish conditions only a mixed screening model gives a chance to achieve the expected minimum 70% screening coverage of women [44], which was indirectly but clearly confirmed by the analysis of the Polish organized population model completed in 2017 [45]. Achieving at least minimal screening coverage will bring Poland closer to the fundamental objective of secondary CCS — reducing morbidity and mortality. The implementation of the above in association with primary prevention of cancer, opens the possibility of its epidemiological elimination [46].

Developing Polish colposcopic guidelines with the minimal recommended colposcopy approach is a necessary step to achieve the objectives.

### General aims of the Guidelines

The most important aims of Comprehensive Guidelines for Colposcopy Standards have been developed, based on the detailed analysis of strong scientific evidences, international guidelines of the highest-authority gynecological societies [2, 16, 37, 38] and on the own experience of the Committee members:

1. These guidelines address the colposcopic examination and cervical biopsy in secondary cervical cancer prevention.
2. They were specifically developed for the Polish conditions, with considering the characteristic features of current CCS models in Poland.
3. Guidelines have been developed as understandable and easy to unambiguous interpretation as possible way, with the attention to uncomplicated popularization and application for educational purposes.
4. Recommended colposcopy approaches enable their effective implementation to national conditions.
5. The main goal was to indicate the minimal practice colposcopy guidelines, with "a nothing below" principle.
6. The optimal and the optional practice colposcopy guidelines were also introduced.

### Basics of colposcopy in the interdisciplinary approach

Strategic for understanding the basics of colposcopic examination is to define the transformation zone (TZ) and the squamo-columnar junction (SCJ). To minimizing limitations of colposcopy, the Committee points the need for extended definition of both terms.

SCJ and TZ are basic dynamic landmarks of the transformation process. Transformation zone is the site for the occurrence of over 90% of cervical precancers, according with the LAST 2012 Project and WHO/IARC 2014 named high-grade squamous intraepithelial lesions (HSIL), and of the cervical cancer [2, 3, 47, 48].

The SCJ is defined as the interface between the stratified squamous and the cylindrical epithelium, and its location in the cervix varies. SCJ is the result of a continuous remodeling process associated with uterine growth, cervical size changes, obstetric history, hormonal status, cervical treatment [49–51], and with a vaginal microbiome as well [52].

The process of a migration of the primary SCJ from the initial endocervical to ectocervical position, often distant from the ostium of the external cervical canal, is a physiological phenomenon of reproductive period.

A gradual replacement of cylindrical epithelium by the stratified squamous epithelium is determined by the metaplasia process, which is initiated in response to the acidic vaginal environment [47, 49, 50].

Metaplasia is an adaptive process usually occurring under the prolonged irritation or hormonal factors. It is replacing one type of mature cell with another [53, 54]. A characteristic feature of cervical metaplasia is its multifocality and the ability to merge smaller areas into larger ones, which has a direct impact on the potential multifocality of precancerous lesions, what might be particularly challenging for colposcopists.

The process of cervical metaplasia begins with the reserve cells lying under cylindrical epithelium. Reserve cells proliferation passing through the phase of immature to mature metaplasia causes creates a new epithelial junction (new SCJ) with cylindrical epithelium. The area between the primary and new SCJ is called the transformation zone [47, 49, 50]. A special feature of reserve cells is their increased susceptibility to HPV infection, which is the fundamental factor in cancer transformation [3].

For the reasons above, documenting the visualization of a new SCJ is one of the most important quality indicators

in colposcopy, as well as a location of colposcopic findings in relation to TZ.

The understanding of TZ and the new SCJ is being aware about their possible multifocal appearance. Transformation zone in histopathological meaning is the area in which squamous metaplasia may appear. Reserve cells initialing that process may apply not only to glandular crypts, whose depth may reach up to 10 mm, but may reach up to the isthmus. Precancerous lesions located in these places might be undetected during colposcopy [48, 55–58].

In the opinion of the Committee's Experts, awareness of the limitations of colposcopy, should result in the use of procedures reducing the diagnostic failure. This applies to endocervical sampling and to the standardization of random biopsy in cases of increased risk of HSIL (CIN2+) [59–61].

Committee members emphasize the possibility of developing two different histologic subtypes HSIL within TZ: classic HSIL, when it develops within mature metaplasia through the intermediate stage of LSIL; and thin HSIL. The latter develops within early metaplasia without the intermediate stage of LSIL, near the new SCJ. Thin HSIL has multifocal character and may coexist with classic HSIL, what all together may hinder a colposcopic examination [57, 62, 63].

### Objectives of Working Group No. 1 on Colposcopic Protocols

WG1 recommends presented colposcopy protocols as a necessary component of diagnostic colposcopy approach. These might be complementary to other current nationwide guidelines or can be their integrated part.

The protocols are aimed at multi-level algorithmisation of the procedure in Polish conditions, focusing on indicating the minimal colposcopy approach.

Guidelines do not include diagnostic-therapeutic excisional procedures: electrical loop (LLETZ/LEEP) and surgical cold-knife. A multi-parameter risk stratification (based on additive analysis of precolposcopic screening tests results with colposcopic image) is recommended to treatment using excisional procedure without preceding biopsy [5].

### Assessment of the strength of the recommendation

In assessing the level of evidence and strength of these guidelines, WG1 adopted the classification used in the "European recommendations for quality assessment in cc screening" [44] (Tab. 1 and 2). Due to the lack of relevant published research on the Polish population, level VI (expert opinions) of strength A (procedure strongly recommended), B (procedure recommended) or C (procedure to be considered but of uncertain importance) was adopted for the all "Colposcopy 2020" guidelines.

**Table 1. Criteria used to assess the level of reliability of scientific evidence**

Level of evidence:	A criterion description
Level I	Consistent multiple randomized controlled trials (RCTs) of adequate sample size, or systematic reviews (SRs) of RCTs, taking into account heterogeneity
Level II	One RCT of adequate sample size, or one or more RCTs with small sample size
Level III	Prospective cohort studies or SRs of cohort studies; for diagnostic accuracy questions, cross-sectional studies with verification by a reference standard
Level IV	Retrospective case-control studies or SRs of case-control studies, trend analyses
Level V	Case series; before/after studies without control group, cross-sectional surveys
Level VI	Expert opinion

**Table 2. Criteria used to assess the strength of the recommendations**

Strength of the respective recommendation:	A criterion description
A.	Intervention strongly recommended for all patients or targeted individuals
B.	Intervention recommended
C.	Intervention to be considered but with uncertainty about its impact
D.	Intervention not recommended
E.	Intervention strongly not recommended

### Major and minor screening abnormalities

WG1 recommends the major screening abnormalities terminology in assessment of the pre-colposcopic stage, defined as:

- screening test results implicating immediate colposcopy, and following colposcopic lesions:
- minor colposcopic findings
- major colposcopic findings
- findings suspicious for invasion
- nonspecific findings (optional)

Which require the use of extended colposcopic protocol, specified in the guidelines as the optimal protocol.

At the precolposcopic stage, minor colposcopic abnormalities include screening test results, which allow a conservative management in specific conditions, usually with follow-up after 12 months. At the colposcopic stage, minor colposcopic abnormalities include colposcopic findings sufficient for the use of the basic protocol.

More detailed definition of major and minor screening abnormalities of the precolposcopic stage remains outside the WG1 guidelines.

### Excisional and ablative procedures

It was decided that protocols for excisional procedures — LLETZ/LEEP, “cold-knife” and ablative procedures (cryo- and laser ablation) should be developed after a completion of other WGs works, in particular the group working on indications for colposcopy, defining major and minor screening abnormalities.

### Types of biopsy in HSIL (CIN2+) risk stratification

Colposcopy with targeted biopsy remains a diagnostic standard in HSIL (CIN2+) detection and the procedure of choice for making therapeutic decisions. Histopathological examination is the “gold standard” [3].

Indications, the number of taken biopsies and the technique of **targeted biopsy** differ significantly not only on recommendations [2, 16, 37, 38], but also between colposcopists [64].

WG1 recommends targeted biopsy when lesions diagnosed as follows are present:

- abnormal colposcopic findings,
- findings suspicious for invasion,
- suspicious metaplasia,
- other suspicious findings.

Whilst taking more, than one biopsy if needed [1, 3].

Many studies prove the limited efficacy of targeted biopsy, *e.g.* the sensitivity for HSIL (CIN3+) varies from 50 to 65%, depending on the study [5–9]. Targeted biopsy cannot be diagnostically effective enough, especially when precolposcopic major screening abnormalities were diagnosed and no colposcopic abnormalities are found.

**Random biopsy** is accepted as an optimal procedure to increase the sensitivity of colposcopy for detecting HSIL (CIN2+), in cases when no colposcopic abnormalities were found.

Random biopsy is defined as a biopsy from each normal quadrant as 2, 4, 8 and 10 clock position at the new SCJ. If new SCJ is not visible a random biopsy is not recommended.

Random biopsy efficacy for HSIL (CIN2+) varies significantly among different studies, with values ranging from 3.8% to 37.4% [65, 66]. These discrepancies are the result of different definitions of abnormal colposcopic findings — a more liberal the definition of abnormality is used the less diagnostic random biopsy is [60].

WG1 recommends a colposcopic nomenclature in accordance with the 2011 IFCPC, translated into Polish with the IFCPC approval (in press).

Comparison of targeted and random biopsy with p16 immunohistochemical staining in cases of HSIL (CIN2+), shows that lesions detected in random biopsy: 1) are more often limited to one cervical quadrant; 2) they are less often associated with cytological diagnoses of AGC, ASC-H, HSIL and cervical cancer; 3) are more frequent in women over 50 years; 4) are less frequently associated with HPV 16 infection [67].

Independently, taking more biopsies increases colposcopic diagnostic value, regardless of a colposcopists experience or the patient's clinical status [59, 66].

For targeted and random biopsies, WG1 recommends microbiopsy tool with a cutting width of up to 2 mm, minimizing tissue traumatization and patient discomfort or pain. Taking more biopsies using microbiopsy instrument does not reduce the patient's acceptance of the procedure [61].

Colposcopic sensitivity for HSIL (CIN2) might be substantially increased, in specific clinical cases, by endocervical sampling with a detection rate is up to 16.7% (average 5.5%) [59, 68].

**Endocervical sampling** can be taken by a traditional sharp curette or with endo-Cervex root by vigorous brushing, or by using both methods. Diagnostic value of both method — ECC and ECB — is comparable [59, 68, 69]. Endocervical brushing in most cases does not require dilatation of the cervical canal, so it is a sparing procedure of choice. Endocervical sampling is not recommended during pregnancy [59].

Indications for ECC/ECB including HSIL (CIN2+) risk stratification were listed in the basic protocol.

**Endometrial sampling** (minimally with aspiration biopsy, *e.g.* using pipella device), in combination with colposcopy with ECC/ECB, is recommended in women of 35 years and older with AGC (all subcategories) or AIS in cytology. As well as in younger women with endometrial cancer risk (*e.g.* atypical hyperplasia/endometrial intraepithelial neoplasia in histology, abnormal uterine bleeding [59, 62], symptoms suggesting chronic lack of ovulation [70]).

Recommended by WG1 a general approach for performing colposcopic examination covers:

- a colposcopic assessment of the cervix divided into quadrants with a clockwise manner (quadrant I — front left, II — rear left, III — rear right and IV — front right) to optimize the procedure.
- biopsy from all recommended areas (more than one biopsy if needed), with a rule of thumb — the worst lesion is usually located closest to new SCJ.
- in cases of precolposcopic major screening abnormalities when no colposcopic abnormality was found a random biopsy from each quadrant as 2, 4, 8 and 10 o'clock at new SCJ should be taken.
- endocervical sampling in all non-pregnant patients.

In HSIL (CIN2+) risk stratification, identification at least two major screening abnormalities of cytologic HSIL, positive HPV 16 and/or 18 infection and major colposcopic findings is associated with higher risk of precancers than the occurrence only one major screening abnormality.

Similarly, concurrent cytologic diagnosis less than HSIL, no HPV 16 and/or 18 infection, and no abnormal colpo-



scopic findings is associated with a lower risk of precancer than the occurrence only one minor screening abnormality. Multi-parameter risk stratification increases a diagnostic value of secondary CCS, including analysis the results of colposcopic examination [5].

In the opinion of WG1, new imaging colposcopy technologies require clinical validation before they are introduced into routine colposcopic practice [64, 71, 72].

### Component procedures of colposcopy

According to these guidelines, a full colposcopy procedure should consist of the following components:

1. Precolposcopic assessment.
2. Colposcopic examination with one of recommended colposcopy protocols.
3. Documentation of colposcopic findings.

### Precolposcopic assessment

WG1 recommends precolposcopic assessment with one of two recommended options:

- basic — obligatory minimum for precolposcopic assessment.
- optimal — recommended precolposcopic assessment, optimal at the time of developing draft guidelines.

Assessment parameters for each option are listed in Table 3.

### Colposcopy examination

As the routine basic colposcopy technique, the following steps are recommended (in the order specified):

1. gross examination of vulva and vagina,
2. initial assessment of the cervix and upper vagina at different power magnifications\*,
3. careful (without causing bleeding) application of saline with washing away the mucus,
4. re-evaluation of the cervix and upper vagina at magnification\* and with green filter (necessary before applying acetic acid),
5. application of 3–5% acetic acid,
6. examine the cervix and upper vagina at different power colposcope magnifications\* [73]:
  - a) after 1 minute routinely
  - b) after 3 minutes (optionally)
7. selection of lesions for biopsy,
8. colposcopic biopsy,
9. achieving and ensuring haemostasis.

\*4 to 15 times magnified image recommended.

Photographic documentation at least of 3), 4) and 6 a) examination steps is recommended, if possible. WG1 points also that photo-documentation a post-biopsy step, can be a useful educational tool.

Due to the inclusion by the IFCPC the Lugol staining result (Schiller test) to non-specific colposcopic images,

**Table 3. Options of precolposcopy assessment with recommended parameters**

PRECOLPOSCOPY EVALUATION OPTIONS	BASIC	OPTIMAL
PARAMETER	–	–
Indications for colposcopy	x	x
<b>Status/result of the last HPV/cytology/p16/Ki67 test</b>	x	x
<b>Status/result of the previous HPV/cytology/p16/Ki67 test</b>		x
Result of the previous colposcopy		x
Excision/ablative procedures		x
LMP — date or age	x	x
<b>Pregnancy status</b>	x	x
<b>Obstetrical history</b>		x
HCT — type		x
IUD — nonhormonal/hormonal		x
Hormonal therapy — type		x
<b>Menopausal status/age of LMP</b>	x	x
MHT — type		x
<b>Status post hysterectomy</b>	x	x
Smoking		x
HIV status		x
HPV vaccination — name, number of doses		x
Others — what?		x
<b>Informed consent of the patient</b>	x	x

HPV — human papillomavirus; p16/Ki67 — immunocytochemical test p16/Ki67; HCT — hormonal contraceptive therapy; MHT — menopause hormone therapy; HIV — human immunodeficiency virus; IUD — intrauterine device; LMP — last menstrual period  
Basic pre-colposcopic evaluation in **bold**

WG1 does not recommend Schiller test in the routine practice [74].

### Colposcopy protocols — a systemic approach

WG1 recommends one of three levels of colposcopy protocols to use in routine colposcopy practice:

- **BASIC** — minimal colposcopy approach (obligatory).
- **OPTIMAL** — recommended colposcopy approach, optimal at the time of developing draft guidelines.
- **OPTIONAL** — approach accepted by Experts as having the highest diagnostic sensitivity in detecting histologic HSIL (CIN2+) at the time of developing draft guidelines.

The choice of the colposcopy protocol in screening models being founded by public resources is an autonomous decision of the founder.

The key principle for the physician participating in secondary CCS in the era of evidence-based precision medicine is a fundamental care for the patient's health interest based on available experts' guidelines and with the individualization of a management.

**Table 4. Recommended levels of colposcopy approach, including minimal obligatory level for colposcopy practice. Detailed description of each approach in the main body of the guidelines**

- BASIC — minimal colposcopy approach (obligatory)
- OPTIMAL — recommended colposcopy approach, optimal at the time of developing draft guidelines
- OPTIONAL — approach accepted by Experts as having the highest diagnostic sensitivity in detecting histologic HSIL (CIN2+) at the time of developing draft guidelines

Dedicated obligatory biopsy types are recommended for all protocols, which does not exclude individualization of the decision to taking biopsy from other colposcopy suspected areas, which is depending on the clinical situation.

#### **BASIC PROTOCOL — minimal colposcopy approach**

According to the main goal of the guidelines a minimal colposcopy scope is recommended — the basic protocol should therefore be treated as an obligatory minimum colposcopy approach, which includes:

- ECC (minimum) and/or ECB (optional) in the case of:
  - ◆ TZ3 (obligatory) and TZ2 (optional) (VI-A)
  - ◆ positive status of HRHPV 16 and/or 18 (VI-B)
  - ◆ ASC-H+ (ASC-H and higher) cytologic results (VI-A)
  - ◆ positive p16/Ki67 test result (VI-B)
  - ◆ abnormal colposcopic findings or suspicious for invasion (VI-A)
  - ◆ all major screening abnormalities of precolposcopic stage when any colposcopic abnormalities were found (VI-B)
  - ◆ considering the subsequent ablation treatment (cryo- or laser ablation) (VI-A) [1, 3, 13, 16, 25, 29–33, 35, 44, 75, 76].
- Targeted biopsy (in particular, from lesions assessed as abnormal colposcopic findings, suspicious for invasion, suspicious metaplasia and from other suspected areas) (VI-A)

**Optional basic protocol** is also acceptable (a variant without cases listed above in the basic protocol for ECC/ECB sampling):

- always ECC (minimum) and/or ECB (optional) (VI-B)
- targeted biopsy (in particular, from lesions assessed as abnormal colposcopic findings, suspicious for invasion, suspicious metaplasia and from other suspected areas) (VI-A)

#### **OPTIMAL PROTOCOL — recommended colposcopy approach**

**Optimal protocol** is recommended as the optimal balance between diagnostic value and the procedure extent at the time of developing draft guidelines. It includes:

- always ECC and/or ECB (VI-B)
- targeted biopsy (in particular, from lesions assessed as abnormal colposcopic findings, suspicious for invasion, suspicious metaplasia and from other suspected areas) (VI-A)
- random biopsy for major screening abnormalities if no abnormal colposcopic findings were presented, if a new SCJ is visible (biopsies from each normal quadrant as 2, 4, 8 and 10 clock position at new SCJ) (VI-B)

#### **OPTIONAL PROTOCOL — accepted colposcopy approach**

Optional protocol was approved for the use in Polish conditions as having potentially the highest diagnostic sensitivity in detecting histological HSIL, at the time of developing draft guidelines. It includes:

- ECC and/or ECB in each case (VI-B)
- targeted biopsy (in particular, from lesions assessed as abnormal colposcopic findings, suspicious for invasion, suspicious metaplasia and from other suspected areas) (VI-A)
- random biopsy in each case of visualization of new SCJ from each normal quadrant as 2, 4, 8 and 10 clock position at new SCJ) (VI-C).

#### **Documentation of colposcopy**

Documentation of colposcopic findings is recommended according to the IFCPC 2011. Colposcopic images should be saved in electronic medical records.

Description of the size and location of the lesion is recommended, and it covers as follows:

1. size of the lesion as number of cervical quadrants the lesion covers,
2. size of the lesion as percentage of cervix involvement,
3. location by clock position,
4. location of the lesion in relation to the transformation zone (inside or outside).

A sample colposcopy report will be presented by the Committee after completing work of all WGs.

#### **SUMMARY**

Recognizing the need of national implementation of the consistent colposcopy practice standards with its systemic algorithmization, the comprehensive guidelines for gynecologists, and other CCS specialists, were provided to increase a diagnostic value of colposcopy in current Polish conditions. Guidelines were based on strong evidence of the literature, extensive review of current international colposcopic standards and on the Committee's own experience. A variety of currently used colposcopy approaches in Poland, levels of training and experience of colposcopists was considered during guidelines development as well.

The use of one of three following colposcopic protocols is recommended in the colposcopy examination:

1. **Basic protocol** — presents the minimal colposcopy approach. It covers taking targeted biopsy (in particular, from lesions assessed as abnormal colposcopic findings, suspicious for invasion, suspicious metaplasia and from other suspected areas) (VI-A) and endocervical sampling (ECC minimally and/or ECB optionally) in cases of: TZ3 (optional TZ2) (VI-A), positive HRHPV 16 and/or 18 (VI-B), ASC-H+ cytologic results (VI-A), positive p16/Ki67 test (VI-B), abnormal colposcopic findings or suspicious of invasion (VI-A), no colposcopic abnormalities found in association with all major screening abnormalities of precolposcopic stage (VI-B), and in cases of planning ablation procedures (VI-A). Performing ECC minimally and/or ECB optionally in each case (VI-B) without specific cases listed detailedly in the basic protocol is also acceptable.
2. **Optimal protocol** — presents the recommended colposcopic approach. It covers taking targeted biopsy (in particular, from lesions assessed as abnormal colposcopic findings, suspicious for invasion, suspicious metaplasia and from other suspected areas) (VI-A), taking random biopsy at the new SCJ (if visualized) from each normal quadrant as 2, 4, 8 and 10 clock position in the cases of major screening abnormalities when colposcopic abnormalities were not found (VI-B) and endocervical sampling in each case (ECC and/or ECB) (VI-B).
3. **Optional protocol** — presents the acceptable colposcopic approach. It covers taking targeted biopsy (in particular, from lesions assessed as abnormal colposcopic findings, suspicious for invasion, suspicious metaplasia and from other suspected areas) (VI-A), taking random biopsy at the new SCJ in each case of its visualization from each normal quadrant as 2, 4, 8 and 10 clock position (VI-C) and endocervical sampling in each case (ECC and/or ECB) (VI-B).

### Conflict of interest

Professor Robert Jach reported honoraria from Gedeon Richter for lectures. No other disclosures were reported.

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